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AN EXPERIMENTAL
COURSE
OF
ASTRONOMY;

PROPOSED by
Mr. WHISTON and Mr. HAUKEBEE.

I. THAT the Earth is a Globe or Sphere, proved by several Arguments. Its Dimensions stated. Why the Heavens, tho' not Spherical, are justly represented by a Globe, as well as the Earth.

II. Ptolemy's System explain'd, and demonstrated to be false.

III. Tycho's System explain'd, and demonstrated to be false; that which is called the *Semirychonick*.

IV. The Copernican System explain'd, and demonstrated to be true; and that both as to the Diurnal and Annual Motions of the Earth.

V. Sir Isaac Newton's Improvements upon the Copernican System, particularly the Motions of all the *Celestial Bodies* about their common Centre of Gravity, shew'd and explain'd.

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VI The chief Circles of the Sphere; as also the Places of the Planets in Longitude and Latitude, with their Aspects, Directions, Stations and Retrogradations, explained.

N. B. The Telescopes of the common Sort; and reflecting Telescopes, Quadrants, Micrometers, and other Astronomical Instruments used in this Course, will be shewn and explain'd, as they come to be applied in Practice.

VII. The Construction of Celestial Globes demonstrated, and the several Constellations noted thereon, explain'd.

VIII. The principal Stars in the several Constellations, actually shew'd in the Heavens.

IX. The Altitude of the Pole, or Latitude of Places, actually shew'd in the Heavens.

X. The Refraction of the Rays of Light out of Vacuum into Air, and out of Air into Vacuum, actually found; and consequently the Refraction of the Sun, Moon and Stars, thence demonstrated.

XI. Directions to find a true Meridian to set Dials by; with some of the easy Foundations and Curiosities of Dialling explain'd.

XII. The Parallax of the Moon explain'd, and the Manner of observing it shew'd; and its several Uses in Astronomy demonstrated.

XIII. The several Ways of discovering the Parallax and Distance of the Sun, Planets, and Fixed Stars, as also of the Clouds, explain'd.

The several Methods of determining the Diameters of the Sun, and Planets, by Observations; from which and their Distances, Magnitudes will be determin'd.

An Account of the Nature of Eclipses, both of the Sun and

The Manner of computing Solar and Lunar Eclipses, and of finding the same by Mr. Whiston's Copernicus, illustrated by Examples of the Two Famous Total Eclipses of the Sun, April 22. 1715. May 11. 1724.

XVII. Ju-

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N. B. The *Velocity of the Rays of Light* will hence be demonstrated.

XVIII. The *Appearances* of Monfr. *Hugens's Planet* about *Saturn*, with the *Situation* of his *Ring*, exhibited, computed and observ'd.

XIX. The *Spots* of the *Sun*, if any appear, observ'd, delineated, and explain'd.

XX. The several *Phases* and *Librations* of the *Moon*, with its *Sea* and *Land*, *Mountains* and *Valleys*, computed, observ'd, and compar'd, with *Hevelius's Maps*.

XXI. The *Eccentricity* of the *Earth's* and *Moon's Orbits*, and Inequality of their *Motions*, with the Manner of observing them, explain'd; as also the *Phases* of *Venus* computed and observ'd.

XXII. The *new* and *strange Appearance*, which may be called the *Sun's Milky Way*; as also several *New Stars*, and particularly those which appear by *Turns*; with the various *strange Phenomena*, and *Luminous Spaces*, noted by Monfr. *Hugens* and Dr. *Halley* observ'd and explain'd.

XXIII. The *Theory* and *Motion* of *Comets* explain'd.

XXIV. The *Principal Phenomena* of the *Tides* demonstrated.

XXV. *Parker's* Ephemeris of the Celestial Motions explain'd.

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